

Application/Control Number: 09/786,642

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CLAIMS

1. A method of extracting sound-source information by use of fixed points of mapping from frequency to instantaneous frequency, comprising:

performing partial differentiation of instantaneous frequency of each filter with respect to frequency to thereby obtain a first value;

performing partial differentiation of output of each filter with respect to frequency and then with respect to time to thereby obtain a second value; and

imparting proper weights to the first and second values and performing short-time weighted integration with respect to time to thereby estimate a carrier-to-noise ratio of each filter, whereby a carrier-to-noise ratio is obtained, and an estimated value of evaluation value is obtained.

2. A method of extracting sound-source information according to claim 1, wherein on the basis of the evaluation value estimated by use of the carrier-to-noise ratio, a logarithm-frequency-axis analogous filter is used for selection of a fixed point corresponding to a fundamental frequency, and the fundamental frequency is extracted without advance information regarding the fundamental frequency.

3. A method of extracting sound-source information according to claim 2, wherein the logarithm-frequency-axis analogous filter and a linear-frequency-axis analogous

adapted chirp filter are used in combination in order to extract the fundamental frequency without advance information regarding the fundamental frequency and to improve the accuracy of the extracted fundamental frequency.

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--4 (New). An apparatus for extracting sound-source information by use of fixed points of mapping from frequency to instantaneous frequency, comprising:

means for performing partial differentiation of instantaneous frequency of each filter with respect to frequency to thereby obtain a first value;

means for performing partial differentiation of output of each filter with respect to frequency and then with respect to time to thereby obtain a second value; and

means for imparting proper weights to the first and second values and performing short-time weighted integration with respect to time to thereby estimate a carrier-to-noise ratio of each filter, whereby a carrier-to-noise ratio is obtained, and an estimated value of evaluation value is obtained.

5 (New). An apparatus for extracting sound-source information according to claim 4, further comprising a logarithm-frequency-axis analogous filter for selection of a fixed point corresponding to a fundamental frequency on the basis of the evaluation value estimated by use of the carrier-to-noise ratio, and means for extracting the fundamental frequency without advance information regarding the fundamental frequency.

6 (New). An apparatus for extracting sound-source information according to claim 5, wherein the logarithm-frequency-axis analogous filter and a linear-frequency-axis analogous adapted chirp filter are used in combination in order to extract the fundamental frequency without advance information regarding the fundamental frequency and to improve the accuracy of the extracted fundamental frequency.--  
analogous adapted chirp filter are used in combination in order to extract the fundamental frequency without advance information regarding the fundamental frequency and to improve the accuracy of the extracted fundamental frequency.--

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